



Bittersweet Trail

Pinery's mammals

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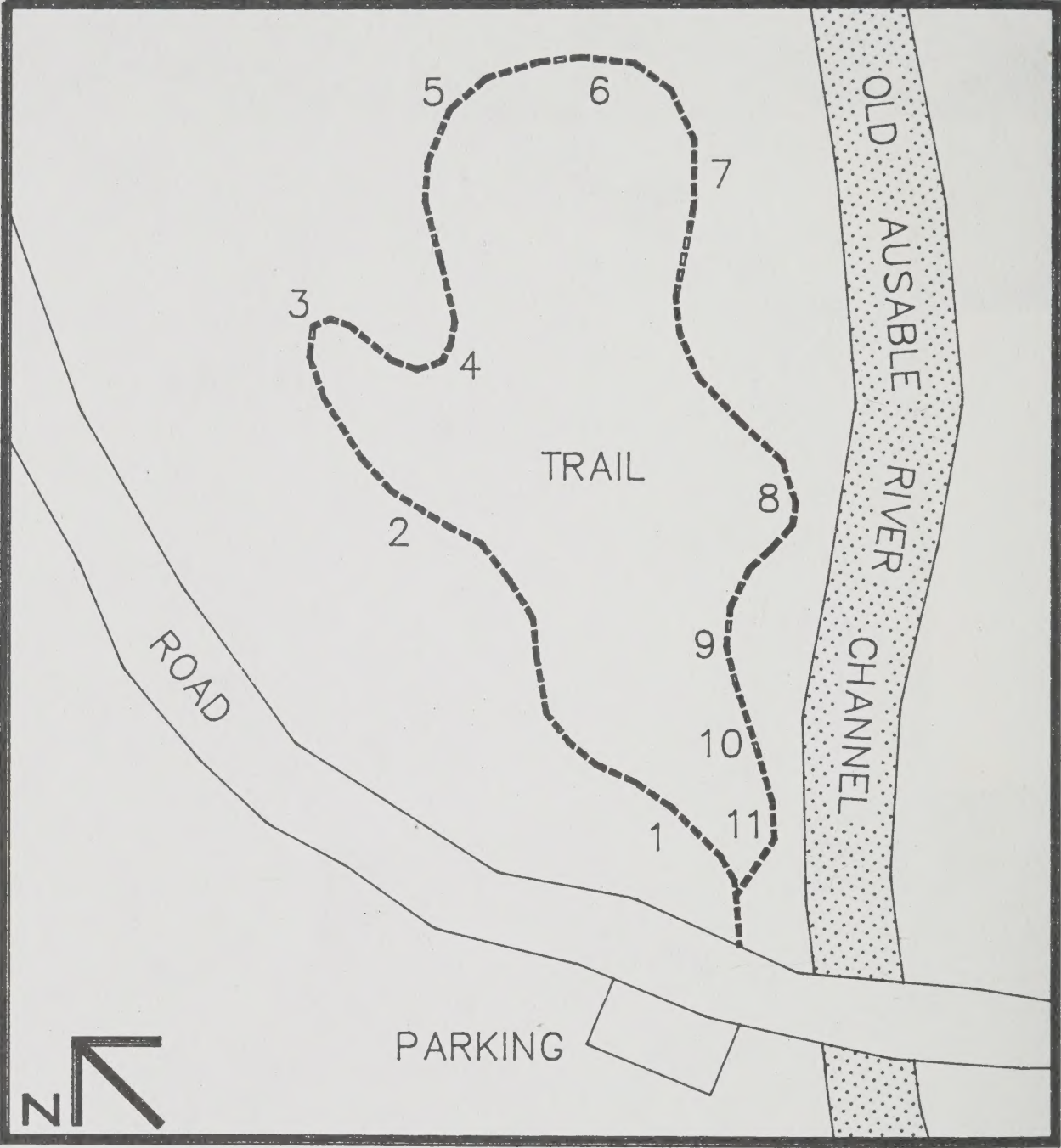
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Bittersweet Trail

Text by Pamela Burns

Illustrations by David Rider



Welcome to Bittersweet Trail. You are about to explore the behaviours of Pinery's most elusive inhabitants; the mammals. The numbered sections in this guide correspond to numbered posts along the trail.

Plan at least one hour to explore this 1.8 km trail. Mammal sightings cannot be guaranteed. Since many of these creatures are nocturnal, the best time to take this walk is in the early

morning or evening. Try to avoid the middle part of summer days which is the poorest time to observe mammals. While you are walking, you will find that:

"the best and most beautiful things in the world cannot be seen or even touched. They must be felt with the heart."

Helen Keller

Post #1: A safe haven

Pinery is one of the largest islands of forest left in south western Ontario. Surrounded by agricultural fields and urban settlements, Pinery is a refuge for wildlife. Within this large island, there is a "niche" or role that a species plays in its surroundings. In Pinery, every possible niche - from tree tops to the ground layer of dead leaves - is used by wildlife. Why then, after walking a trail, do people often exclaim, "I didn't see a thing?"

What people are really saying is, "I didn't see any mammals." Many of Pinery's mammals are either active during the night or are very secretive; both of which are excellent survival strategies if you wish to avoid detection by a predator or by a person.

While walking through this mature Oak-pine forest, you will discover the lifestyles and behaviours of some of Pinery's mammals. By understanding many of these behaviours, your leisurely walk in the woods will become an adventure.





Post 2 Pinery's flying circus

We've all seen pictures of circus acrobats completing death defying moves on the high wire. One wrong move and the acrobat plunges to a safety net below. Looking at the large oak trees surrounding you, it's hard to believe that Pinery has its own tree top acrobat. Few visitors to the park witness the antics of this nocturnal performer because while we are sound asleep, the Southern Flying Squirrel's show is just beginning.

Searching for acorns and other seeds, it is not unusual to see several of these small squirrels scurrying up and down tree trunks, squeaking and chasing each other as they go. Once at the top of the tree, one of these creatures will momentarily disappear from sight, only to be spotted on a tree some distance away.

These chipmunk size squirrels don't actually fly, but glide. They climb to the top of a tree and launch themselves into the air. Instantly, they spread out all four limbs. The fold of furred skin that stretches from their forearm to their hind ankle provides a billowing gliding surface. Their tails act as a rudder which allows them to change their gliding direction in mid air. As they prepare to land, their lower body drops and the tail lifts to slow their speed. Using their legs as shock absorbers, a soft, safe landing is completed.

This ability to "fly" from tree top to tree top is a distinct advantage to an animal that lives and forages in tree tops. Why waste time or risk a waiting predator by climbing down a tree and back up again if you see something good to eat close by? Why not just leap? After all, the shortest distance between two trees is only a glide away!



Post 3 Burr it's cold!

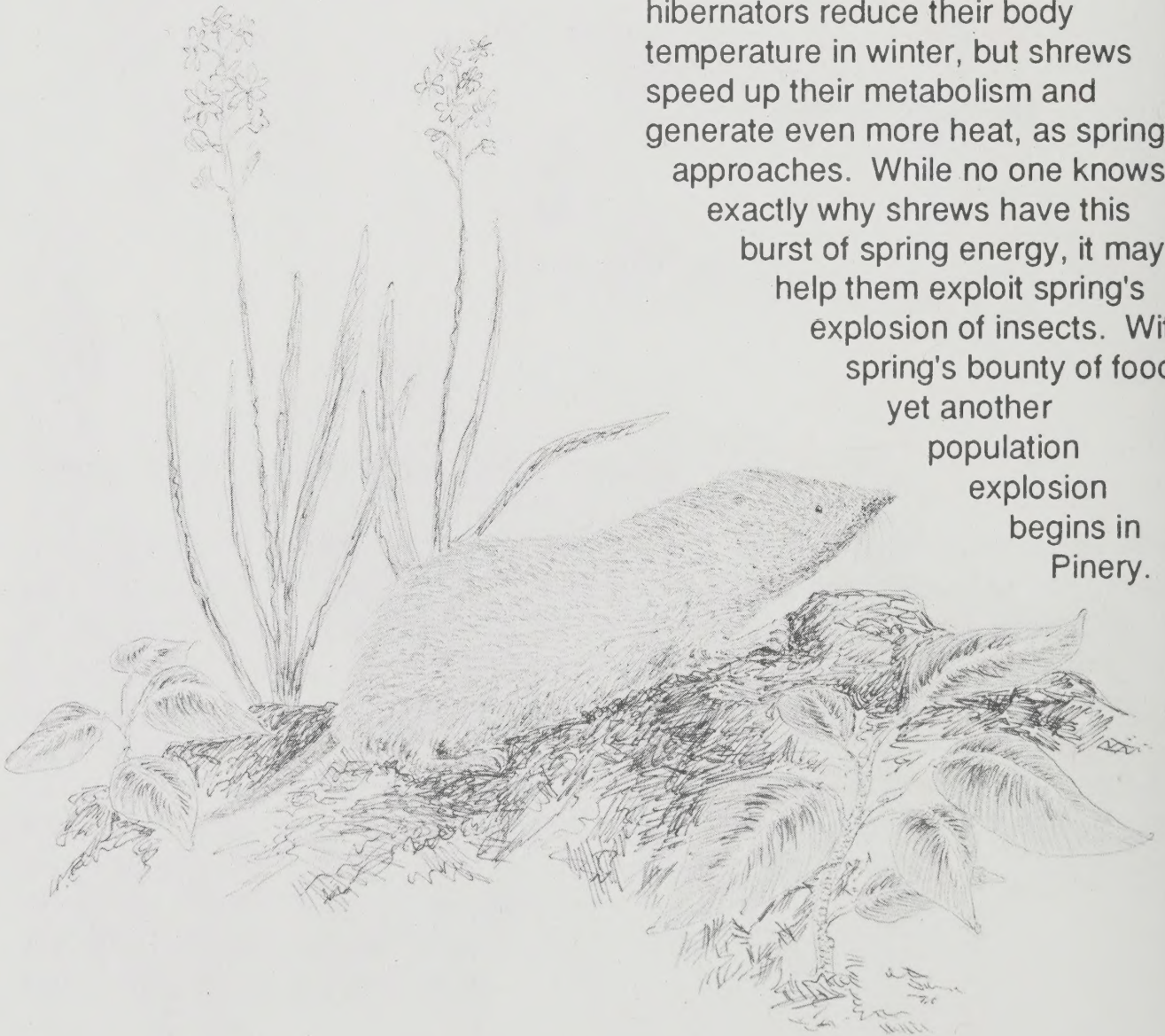
Take a moment to enjoy the sunshine. On a warm summer day, it's hard to think about winter, but preparation for winter is going on all around you. With the onset of winter, most people assume that all mammals hibernate or spend the winter in a resting state. For some mammals, like the Short-tailed Shrew, hibernation is impossible. They must constantly search for food all year long.

Fuelling their high metabolism is vital to these tiny mammals. Short-tailed shrews generate large amounts

of body heat, most of which is lost to the air surrounding them. To maintain their body temperature, these shrews must eat almost constantly. Failure to find food could mean starvation.

Short-tailed shrews are insect eaters, although their diet also includes slugs and snails which are high in protein and calories. In the winter, dormant insects and insect larvae and even small mice are abundant food sources.

Hibernation is impossible as Short-tailed Shrews lose heat and burn body fat at too high a rate. True hibernators reduce their body temperature in winter, but shrews speed up their metabolism and generate even more heat, as spring approaches. While no one knows exactly why shrews have this burst of spring energy, it may help them exploit spring's explosion of insects. With spring's bounty of food, yet another population explosion begins in Pinery.



Short-tailed shrews have poisonous saliva which paralyses or even kills its prey.

Post 4 Rise and fall of the deer mouse

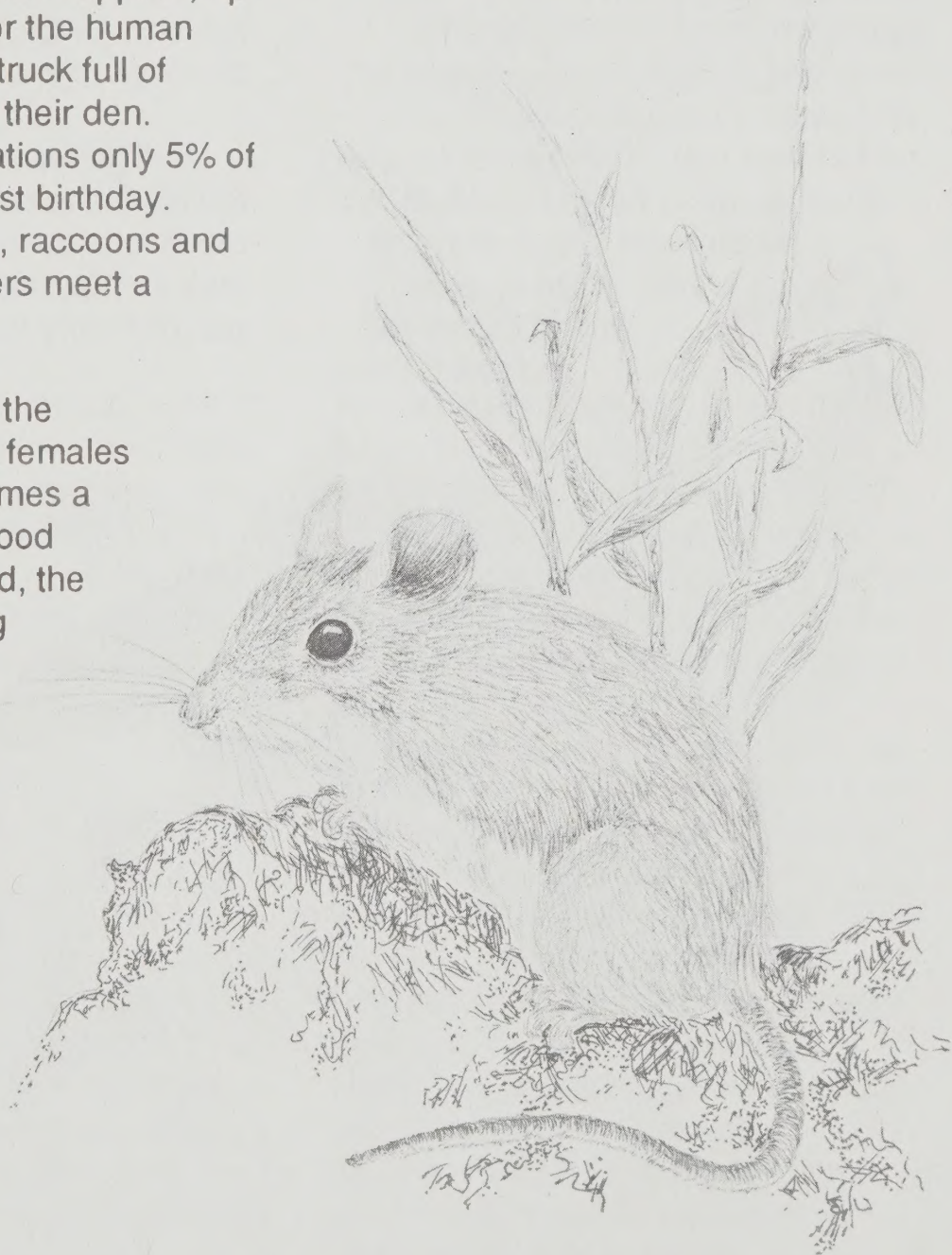
One of the most asked questions about park wildlife is "how many are there of such and such a species?" It is almost impossible to give an exact answer to this question because populations can change dramatically in a very short time. The seasonal rise and fall of the deer mice population is a perfect example.

Much of a deer mouse's life centres around gathering food. Flower seeds, berries and insects are all eaten. When storing winter food supplies, up to a gallon of seeds, or the human equivalent of a dump truck full of apples, are cached in their den. Despite these preparations only 5% of deer mice see their first birthday. Many fall prey to owls, raccoons and other predators. Others meet a different end.

To replace 95 % of the population each year, females will breed up to four times a summer. Without a good supply of summer food, the females stop breeding early in the summer. She might also deliberately kill some of her offspring to ensure the remaining mice are strong enough to survive the winter. As a result, the next spring's population may be only one tenth of what it was the previous autumn. As spring

progresses, the numbers build up to previous levels.

Definite answers to the "how many" question can be impossible. Another complication in answering this question is the fact that many mammals are seldom seen but, only heard by humans. At the next stop, we will meet one such inhabitant of Pinery.



Post 5 The secret to survival

Coyotes are an amazing success story. Originally found only in the American southwest, coyotes are now found in almost every corner of North America. They are one of the few mammals that has expanded its range, despite the onslaught of civilization. Seldom seen by campers, coyotes betray their presence by their tracks and howling.

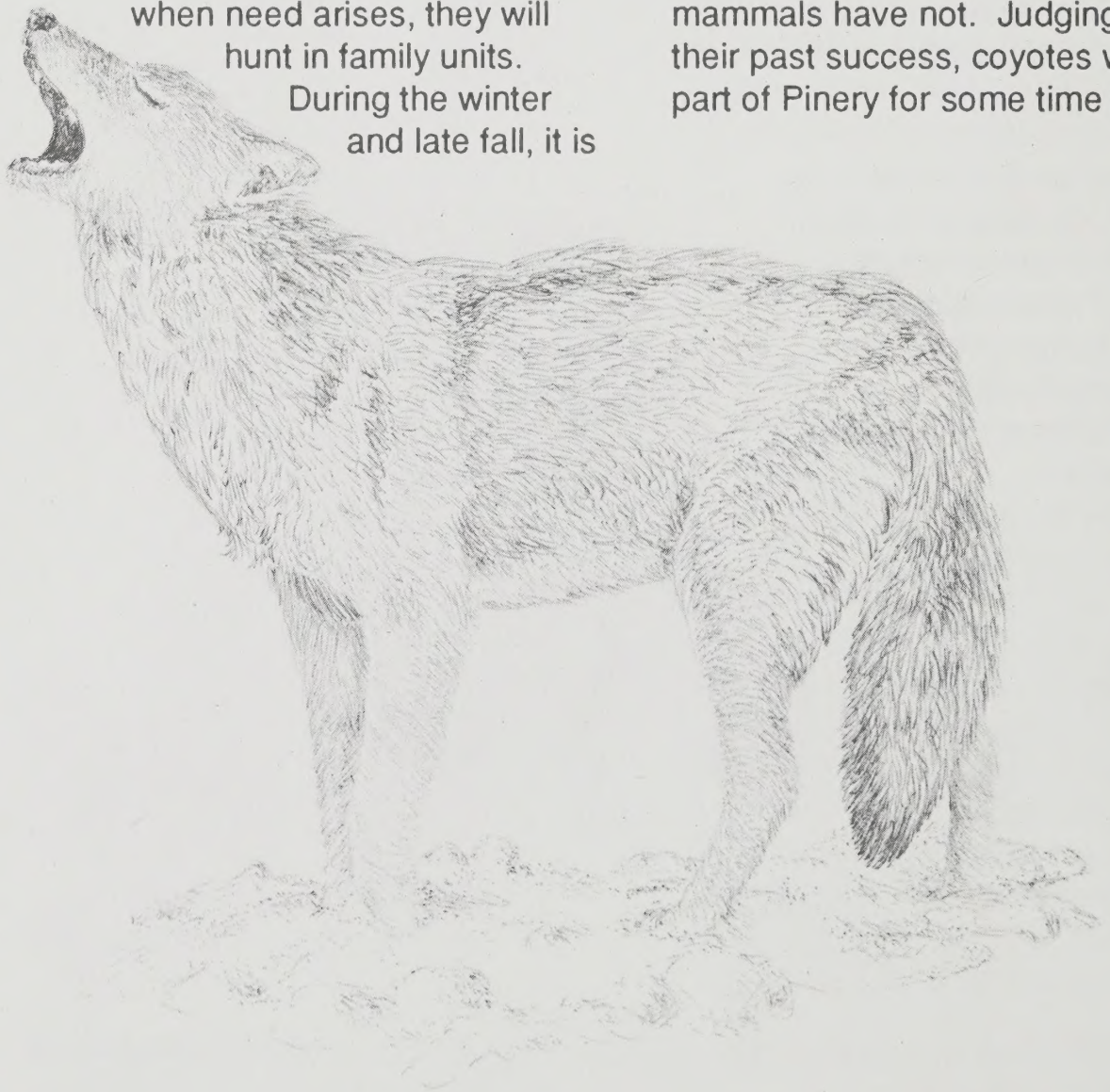
Coyotes adjust readily to change and have no dependence on one particular prey item for food. Their diet is whatever food is on hand; mice, bird's eggs, insects, frogs, fruit and dead animals make up a large part of their diet. This type of food is obtained easily by an individual, but when need arises, they will hunt in family units.

During the winter and late fall, it is

not unusual for coyote families to hunt ailing White-tailed Deer.

The ability to hunt alone or in pairs is not the only advantage the coyote has; they are crafty and intelligent. They may watch for a circling Turkey Vulture to discover the location of carrion - which it steals from the vulture. Or, it may set up a relay race with another coyote to catch fast moving prey such as a rabbit. One coyote will chase their prey towards another hidden coyote which then takes the chase over until the rabbit is captured or exhausted.

Intelligence and adaptability allows the coyote to survive where other mammals have not. Judging from their past success, coyotes will remain part of Pinery for some time to come.



Post 6 Fat cats



Campers know that raccoons will eat anything left out on a picnic table. Whether this food is something normally found in the wild or not, is irrelevant to a raccoon searching for food. This ability to incorporate new foods into their diet makes raccoons the "Fat Cat" of Pinery's mammals. Raccoons are omnivores, or eaters of everything from soup to nuts! Crayfish, frogs, snakes, any edible fruits and berries are all on the raccoon's menu.

With such indiscriminate tastes, raccoons survive almost anywhere and in any season. This old, hollow oak tree is a typical denning site for raccoon's during the winter. Early in the autumn raccoons begin gorging on

rich acorns and insect larvae. They begin to build up fat reserves over their entire body and even around the tail bone. By late fall about half of the animal's total body weight may be fat. This stored energy helps sustain the raccoon over the cold winter months.

Intelligence also plays a part in the raccoon's success. Many of the foods that raccoons eat are not sought out by instinct, but are eaten after watching their mother eat them. This way youngsters discover how to manipulate anything from a camper's cooler, to marshmallow bags to crayfish. Equally happy with the delicacies of acorns or with a camper's supply of food, raccoons always find plenty to eat - and discover the way to eat it!

Post 7 Sorry to eat and run

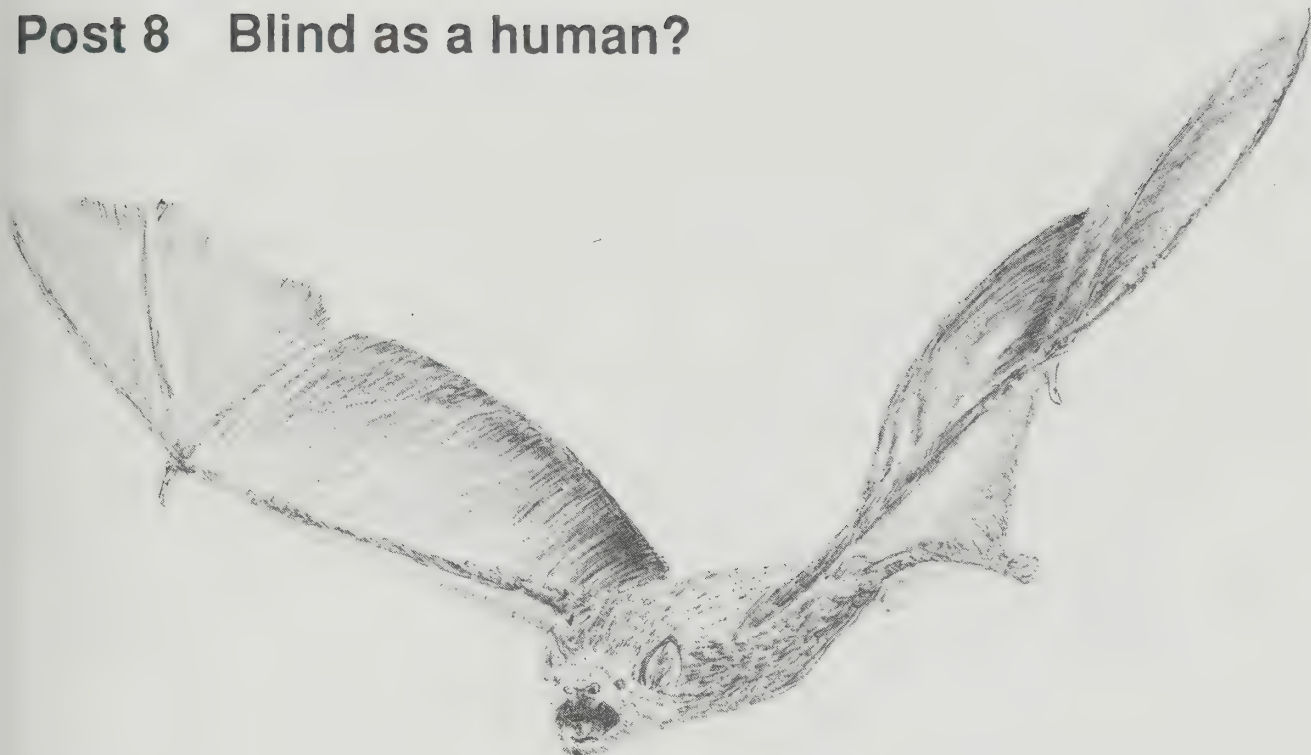
Bittersweet Trail is an Oak-pine forest or an area where oak and pine forests mingle together with ample space between the trees. White-tailed Deer like to feed in the area where two different types of vegetation come together to create an "edge". While feeding in such open edges White-tailed deer seem like they would be perfect targets for predators.

To cope with this problem, deer have evolved a feeding strategy that gives them a slight advantage in avoiding capture when they are vulnerable. Deer browse on the leaves, buds and twigs of shrubs and trees. Before swallowing, they don't take much time to chew their food. Later, they will bed down in a quiet area and regurgitate their food into their mouths a little at a time and re-chew it. Once re-swallowed digestion can begin.

While chewing their cud is necessary for easier digestion of woody, coarse food, it also minimizes exposure to predators. Deer are designed for quick get aways. Over long distances they tire easily and prolonged chases can result in exhaustion. By not taking the time to carefully chew their food before swallowing, they have a split second head start over their chaser. This head start could mean the difference between capture and escape.



Post 8 Blind as a human?

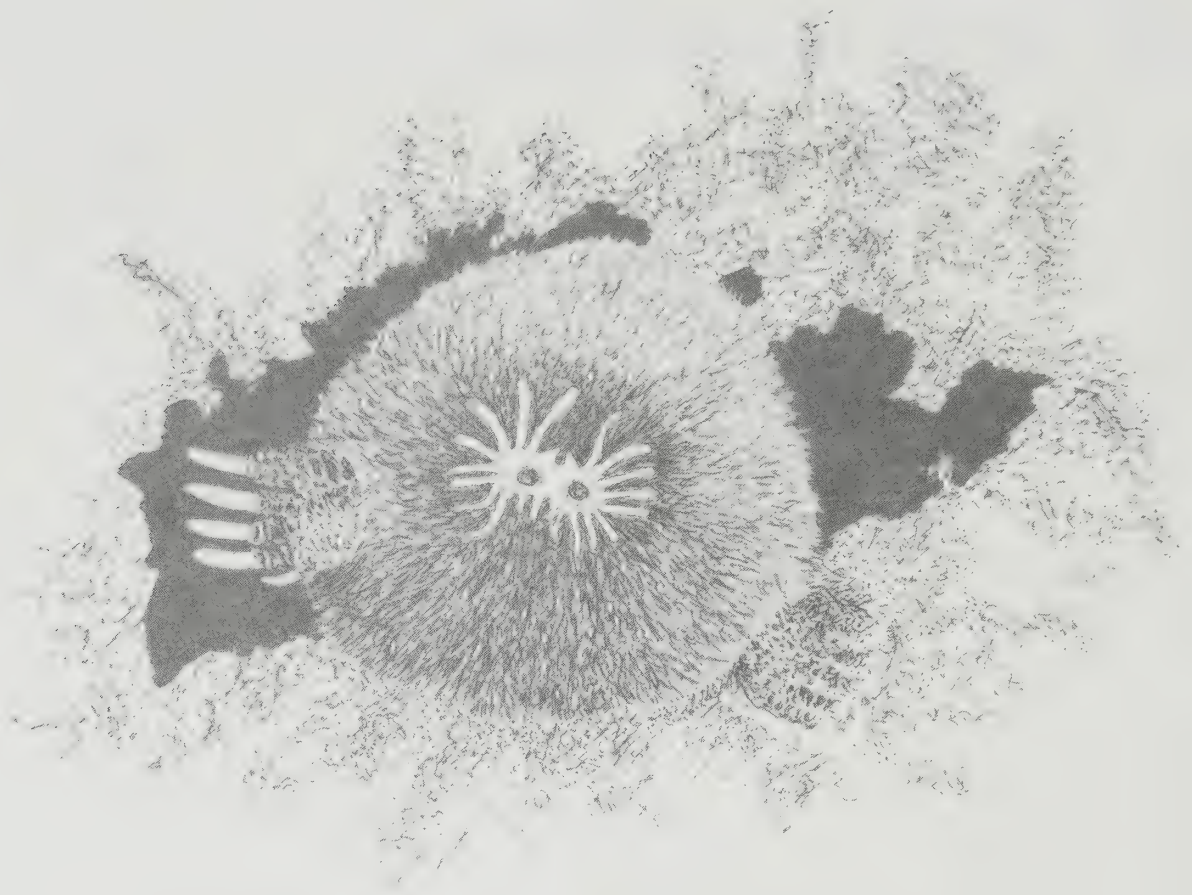


Why are many mammals awake at night? For some, day time is too warm to hunt. For others, it is to take advantage of food source that may be under utilized. Camouflaged as they hang among the leaves, Hoary Bats roost in Pinery's oak trees during the day. When darkness comes and moths and other insects start flying, Hoary bats begin to hunt.

All bats have eyes and can see to varying degrees but, insect eating bats like the Hoary Bat use a system of echolocation to find their food in the dark. This same mechanism helps them to avoid flying into obstacles such as trees.

Bats emit "bursts" or pulses of high frequency sound. The bat then listens to the echoes these of sound pulses rebounding from objects in its path. When a bat is "cruising" or navigating, they send out constant frequency tones at a slow pulse rate. As a bat gets closer to its intended prey, the sound pulses being emitted by the bat will increase from 5 to 200 pulses per second! All of this occurs extremely quickly. A bat that sends out a sound to strike an object 3 feet away is hit by the echo in 6 milliseconds!

Hoary bats burn energy quickly and so must consume large amounts of food. Usually they will eat one third to one half their body weight nightly. For a Hoary Bat that may weigh only one ounce, this translates into about 3000 insects in one night making them one of Pinery's most effective predators.



Post 9 Nothing's perfect

It isn't true that everything is "perfectly" adapted to its environment. Adaptations are those characteristics that increase an individual's chance of survival and of producing offspring. Like everything else in life, there are benefits and drawbacks to all adaptations.

Star-nosed moles live most of their life underground and are equally at home in water. Their tunnels usually open close to or even underwater. Eyes in a dark tunnel are all but useless to a mole. To avoid constant exposure to soil and infection, their eyes are very small. When moles do surface on land, their lack of well developed eyesight is a major drawback.

To catch tadpoles, minnows, snails and leeches Star-nosed moles must be able to swim. Small front feet, a

long tail and flat, wide hind feet all aid in water travel. Movement on land with their permanently turned out front feet is difficult. Usually a quick scamper to a burrow is the only time Star-nosed moles are seen above ground.

Named for the ring of 22 tentacles on its snout, this appendage is comparable to the human hand. It senses touch, vibration, pressure changes and chemical sensations and may help identify food items in muddy stream and pond bottoms.

Every adaptation has limits and virtues. The Star-nosed mole's body structure increases its chances of survival under the soil. The trade-off is a decreased ability to move on land. As you will soon see, trade-offs are also necessary when some animals search for food.

Post 10 Ahh...forget it!

Look at this partially gnawed tree. Obviously something happened to cause a beaver to abandon its work before the job was done. Did a predator frighten the beaver away? Or is there another answer?

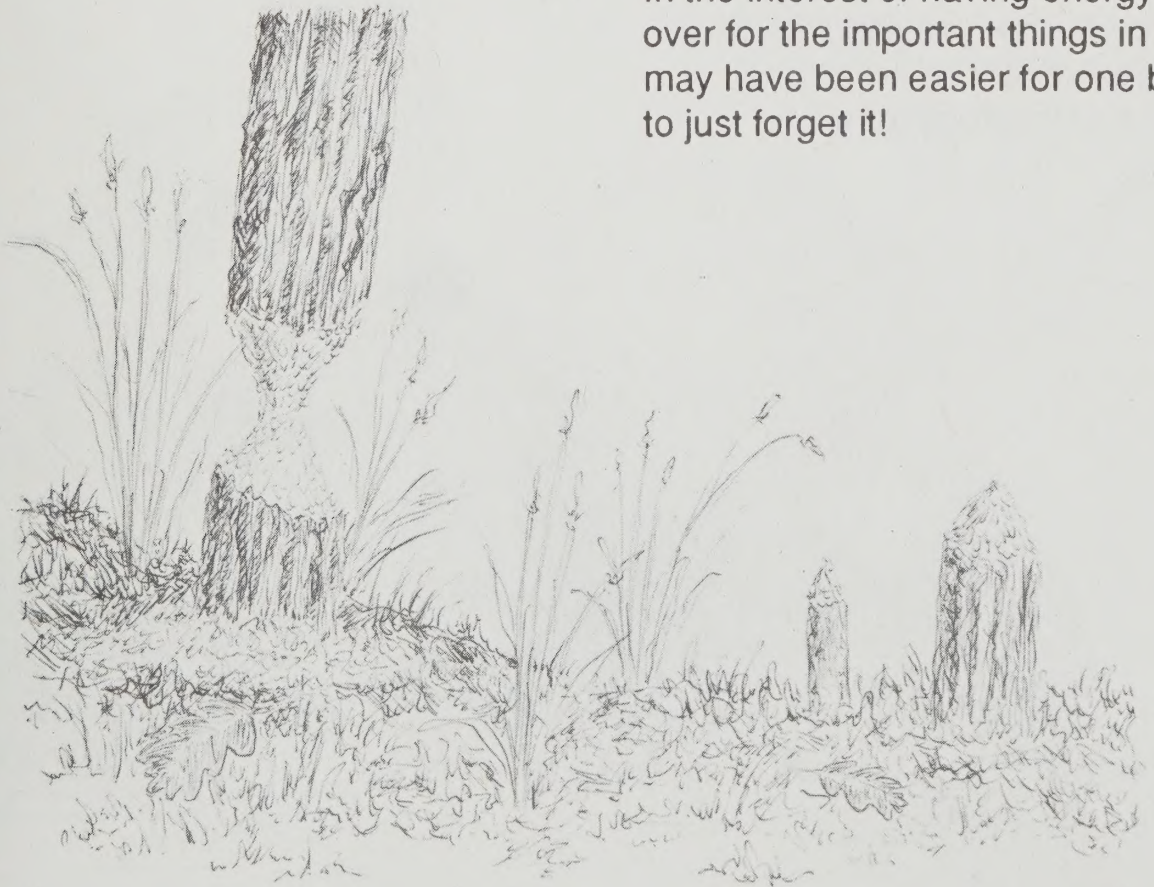
When searching for food, a beaver will try to get the most food for the least amount of effort. Location of the tree they wish to harvest for its leaves and bark, often influences their choice.

Beavers must "decide" if they will spend less energy cutting down several smaller trees with less food on them, or whether to cut down one large tree that offers more food. While the answer seems obvious, the tree's distance away from water is important.

Even though a large tree may be closer to the river, there is a chance that it may get tangled in the branches of other trees and not fall down. This causes a beaver to cut the same tree down again - with obvious results. The smaller trees are easier to drag despite the beaver's awkwardness on land.

Beavers don't consciously make decisions; their actions are based on instinct, but usually a beaver will "do the right thing" to get their food. While this situation seems unsolvable, the best feeding strategy will not always be the one that yields the most food, but will be the one that also leaves enough energy left over to produce offspring.

No one can definitely say why a beaver left this tree standing - perhaps this white oak tree simply taste awful. In the interest of having energy left over for the important things in life, it may have been easier for one beaver to just forget it!

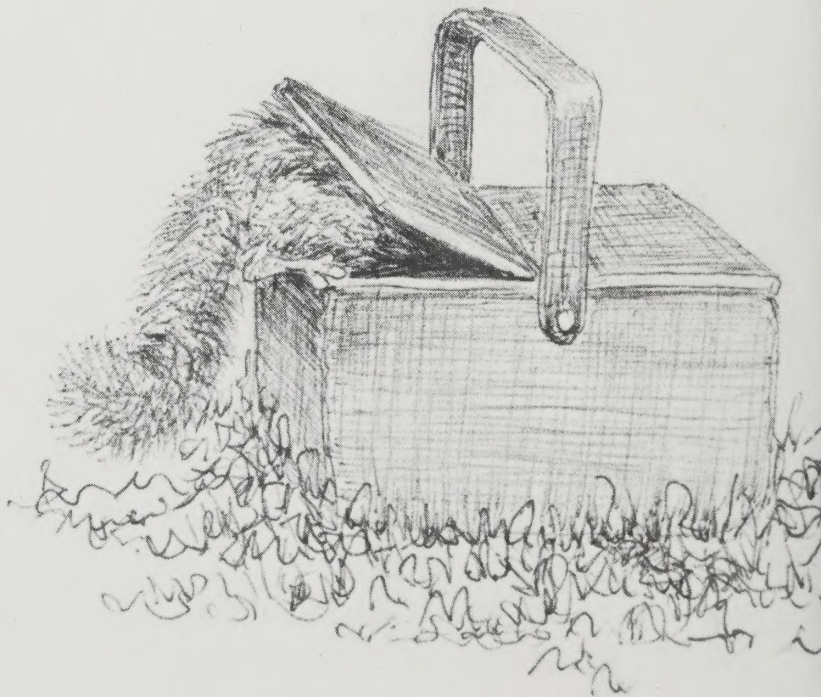


Post 11 People and Pinery

Humans are the most influential mammals in Pinery. People have the ability to determine the future of wildlife, both inside and outside the boundaries of the park. Unfortunately, we have the capability to change or destroy the habitats which wildlife depends on.

Some of the mammals you have met today have developed a capacity to live in the presence of humans. Others are unduly persecuted simply because they aren't "pretty" or because they must kill other creatures so that they may live. Still others, like the black bear and wolf, you will never meet in Pinery again. Hunting pressures and habitat destruction in south western Ontario have forced these mammals to seek a living elsewhere.

As you come to the end of your walk, please take a moment to contemplate how you can actively help preserve all wild areas and provide a safe refuge for all.



Post 12

If you wish to keep this guide, please pay at the introductory sign. If not, please place it in the box at this post so that others may use it later. Your payment covers the cost of the guide and supports the projects of The Friends of Pinery Park. Thank you.



Other

Pinery Trails This is just one of nine trails maintained in Pinery Provincial Park. Each trail has been developed to introduce you to some aspect of Pinery's natural or cultural history and has either interpretive sign posts or a guide similar to this one. The other eight trails are listed below.

Carolinian Trail is a 1.8 km trail that travels along a dune ridge allowing you to look over the Ausable floodplain. The trail guide describes the ecology of the Carolinian Forest that is found along this trail.

Cedar Trail is 2.3 km long wheelchair accessible trail. The trail guide introduces you to Pinery's rare and expansive oak savanna community.

Riverside Trail is a gently rolling trail that meanders along the banks of the Old Ausable River Channel. This trail is wheelchair accessible and the guide describes the history and ecology of the Ausable River.

Hickory Trail is 1 km long and passes through stands of shagbark hickory and red oak along the banks of the Old Ausable River Channel.

Wilderness Trail is a 3 km trail that will take you through some of the more remote forests in the park and then across the dunes to a viewing platform overlooking Lake Huron.

Lookout Trail is a 1 km trail that travels up one of the largest dunes in the park to a spectacular view of the Thedford Bog.

Pine Trail is 0.8 km in length and will lead you through stands of red pine and under towering oaks.

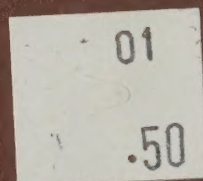
Nipissing Trail is 2 km long with a substantial climb to the top of the highest dune ridge in the park. Both the lake and the Thedford Bog can be seen from the lookout on this trail.

All trails are self guided. Interpretive brochures for the are available at the trail entrance or the Visitor Centre. The riding of bicycles on any of Pinery's trail is prohibited by law at all times.

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The Friends of Pinery Park
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